Workshop Announcement

Getting from Where We Are to Where We Want to Be In Nuclear Separations Technologies

July 27 – 28, 2011 Bethesda, MD

As the Department of Energy's recently released revised Strategic Plan[1] articulates, the growing global demand for energy, coupled with increasing concerns about climate change, has accelerated deployment of nuclear power plants and fuel cycle facilities despite recent events overseas. The Department supports the President's call to work with other nations to build "a new framework for civil nuclear cooperation" so that countries can access peaceful nuclear power without increasing the risks of proliferation. Engaging the expertise of U.S. industry, national laboratories, and universities offers the potential to solve some of the most complex, pressing energy challenges facing our country: improving energy production and the use of nuclear fuel; enhancing proliferation resistance; and reducing the volume, toxicity, and lifetime of waste streams.

Basic and applied research by the Department's predecessor agencies in the early to mid-20th century laid the foundation for modern nuclear power and fuel cycle technologies. A key element of nuclear fuel cycles is the use of separations technologies such as used fuel recycling, material stabilization, waste treatment, and isotope development and production. The need to develop these nuclear separations technologies cuts across a number of important Department organizations, including the Office of Nuclear Energy, Office of Environmental Management, National Nuclear Security Administration, and Office of Science. The purpose of this workshop is to bring together scientists and engineers from various communities to set a course for moving from where we are to where we want to be in nuclear separations technologies.

GOALS OF THE WORKSHOP

The goal of this workshop is to determine the path necessary to support the following technical challenges within the next three to five years:

- Enable the responsible deployment of civilian nuclear power and fuel cycle management by developing used fuel recycling technologies that are alternatives to PUREX and support waste minimization;
- Support environmental remediation of our legacy and active sites by developing next-generation legacy waste treatment technologies that increase performance and reduce cost; and,
- Reduce global threats of nuclear material by supporting isotope production using alternatives to highly enriched uranium.

REGISTER NOW:

http://events.energetics.com/NuclearSeparationsTechnologyWorkshop/index.html

[1] http://energy.gov/news/documents/DOE_StrategicPlan.pdf

THE WORKSHOP PROCESS

The two-day workshop will begin with an introductory plenary session, followed by breakout sessions with groups organized to address technical challenges. The workshop will conclude with a summation plenary session where each program breakout group will report the results of their discussions, analyses, and recommendations. Read-ahead materials will be provided to prepare participants for the workshop, and a final report will be issued based on their outcomes, findings, and recommendations.

The workshop seeks participants from a range of expertise in the following areas of separations and physical sciences:

- Chemistry of the actinides and other important radionuclides and metals, and their applicability to commercial use
- Separations science and engineering processes
- Surface science, solid-state chemistry, and material science
- Analytics (including non-destructive analysis, nuclear materials accountability)
- Waste form development, including modeling and simulation
- Computational application methods and tools as applied to separations technologies.

Participants from other relevant areas may also attend.

Save the Date – July 27-28, 2011
Venue location: Bethesda Marriott, 5151 Pooks Hill Road.
Registration: Click Here.

Points of Contact for Each Participating Office:
NE: Andy Griffith (andrew.griffith@nuclear.energy.gov)
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The Department of Energy's Mission

The mission of the Department of Energy is to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions.

Secure Our Nation

This workshop supports the Department's Goal 3: Enhance nuclear security through defense, nonproliferation, and environmental efforts.

Program Specifics

Sponsoring Programs

- Office of Nuclear Energy (NE) – We are evaluating next-generation fuel recycling technologies that are alternatives to PUREX. Safety and security concerns surrounding civilian nuclear power must be successfully addressed in the United States and globally. By taking a leading position in helping to craft the international nuclear technology "rules-of-the-road" and providing a sound technology base for their implementation and enforcement, the Department can facilitate safe and environmentally acceptable approaches to recycling nuclear fuel while reducing greenhouse gas emissions and maintaining public confidence. NE's mission includes research and development in search of fuel-cycle technologies that improve resource utilization while reducing the risk of proliferation.
- Office of Environmental Management (EM) – We are developing the next-generation of waste treatment technologies to increase performance and reduce cost. Our strategy is to work aggressively to reduce the footprint of our contaminated sites while bringing to bear the Department's formidable research and development assets to develop and deploy transformational technologies that will both accelerate and lower the cost of dispositioning our highest-curie materials that present high risk to public health and the environment. Disposition of this material remains our biggest challenge, as there are few precedents and fewer existing technologies and processes available to solve them. For these unique challenges, advancing our technology efforts is essential to finding new and better solutions.
- National Nuclear Security Administration (NNSA) – In support of national nonproliferation objectives, we are examining new approaches and technologies to dispose of surplus weapons grade materials and reduce the dependency on highly enriched uranium. U.S. commitments to dispose of surplus weapon-grade plutonium to ensure it cannot be used again for nuclear weapons require a safe, secure, transparent, and effective disposal process.

Supporting Program

Office of Science (SC) – Within SC the Office of Basic Energy Sciences (BES) sponsors fundamental and use-inspired research that enables new technologies supporting the Department's energy, environment, and security missions. BES research in chemical and materials science such as actinide chemistry, separations science and radiation effects on materials and chemical processes is relevant to the current workshop focus.